

36. MYRMECOPHAGA JUBATA, Linn.

One specimen from Sarayacu.

37. TAMANDUA LONGICAUDATA, Wagn.

One specimen, Sarayacu.

38. CYCLOTHURUS DIDACTYLUS, Linn.

Four specimens from Sarayacu, and one from Balzar.

39. DIDELPHYS DERBIANA.

Didelphys derbiana, Waterh. Naturalist's Libr. xi. p. 97, pl. 2.

Didelphys ornata, Tschudi, Fauna Peruana, p. 146, pl. 7.

A male from Sarayacu, and a male and female from Balzar.

The Balzar specimens are of a very pale reddish colour, while the Sarayacu one is of a dark reddish grey; but the Museum series shows every stage between the two.

40. DIDELPHYS CINEREA, Temm.

A male and female from Sarayacu.

41. DIDELPHYS MURINA, Linn.

One specimen from Balzar.

7. On a Collection of Lepidoptera from Candahar. By
ARTHUR G. BUTLER, F.L.S., F.Z.S., Assistant Keeper
Zoological Department, British Museum.

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(Plate XXXIX.)

The very interesting little series of Lepidoptera which forms the subject of the present paper was collected by Major Howland Roberts at Rokeran, a small village only about six miles from Candahar, on the river Urgundab (or "Argandab"). Major Roberts writes (date 9th January, 1880):—"I made no observation after the 2nd July, further than that I saw two species of *Macroglossa*, viz. *stellatarum* or one nearly allied, and one considerably larger.

"After the beginning of April no rain fell; and when I arrived at Rokeran about the end of April the country was dried up, except where irrigation came into play and a few moist spots in the barren hills. The only plants that were green in these hills during the summer months were chiefly milky plants such as *Euphorbia*, and a few other stunted ones, but no trees; consequently insects were comparatively rare.

"Along the dry bank of the river were little nullahs running into the river; these were kept moist from a small canal running above

and parallel to the bank : in these were a few living plants more or less green. In these nullahs I found no. 26 Butterfly, also nos. 8 and 23, where the food-plants of the larvæ were common. Not a single shower of rain fell from the beginning of April till the 20th December. The lucerne is grown in the young plantations of fruit-trees, and is watered from small canals which traverse the whole cultivated portion of the country." In a letter (dated 15th January) he adds :— " It is *not* curious that I have got so few specimens, the reason being that my hunting-grounds were extremely limited. There is every reason to believe we shall go towards Ghuznee this summer, and probably start about the end of February or beginning of March ; and I expect that will be a far better part of the country than this, there being no forest or even scrub jungle of any kind here, the only trees being fruit-trees, with a very few exceptions. The war appears only just to be commencing ; so I cannot form an idea when I shall get out of the country : the worst of it is, it is not safe to go even a few yards from quarters without being well armed, and to go any distance at all, even a few miles, is very unsafe without an escort ; so that there is not much pleasure in being in a country like this." " I collected very few eggs here—only those of the common and Red-backed Shrike, a small Dove which built its nest on the rocks, a crested Lark (extremely abundant), a ' chikor ' (a red-legged Hill-partridge), and one or two others ; I am afraid I shall have even a worse opportunity this year of finding any. I can do nothing where I am at present : I gave up collecting Butterflies last year earlier than I should have wished to, owing to cholera breaking out here rather severely, as the sick were put in the places I was in the habit of frequenting. I visited the hills close by ; but after 1st of July they were so dried up that only a few common butterflies were to be found ; moths I caught very few of, owing to being unable to go outside the walls after dusk, and there being no flowers of any kind near to attract them."

" I don't think I ever mentioned to you that there was a silkworm common at Jutogh on mulberry. It was very like the common silkworm so well known in England (*B. mori*) : but (I am sorry to say I made no description of it at the time) it was light brown, and had a good many long fleshy projections over the body (some perhaps a quarter of an inch long). The silk was very like that of the common one, a beautiful golden colour, and quite as good, if not better. There was no difficulty whatever in winding off the silk ; and it was extremely strong. In 1876 it was common and double-brooded ; but in 1878 I only observed one brood. In 1877 I was in Cashmir, where, in a mulberry orchard, I found one crawling up my tent."

In a subsequent letter Major Roberts forwarded careful sketches of the larvæ of some of the species obtained by him, of which he had already forwarded descriptions, together with notes on habits, date of capture, and, so far as he could ascertain, the distribution of the insects obtained by him, all which information I have incorporated in the present paper.

List of the Species.

RHOPALOCERA.

NYMPHALIDÆ.

1. DANAIS CHRYSIPPUS ♀ (no. 7).

Papilio chrysippus, Linnæus, Mus. Lud. Ulr. p. 263 (1761).

“Common everywhere in June; less common and battered in May.”

2. DANAIS PLEXIPPUS (no. 19).

Papilio plexippus?, Linnæus, Mus. Lud. Ulr. p. 264 (1764).

“Saw one specimen, but failed to catch it.

3. HIPPARCHIA PARISATIS (no. 15).

Satyrus parisatis, Kollar, Denkschr. Akad. Wien, math.-nat. Cl. i. p. 52. no. 7 (1850).

“When fresh and in the sun the white border is shot with brilliant blue. Frequents nullahs and shady places, and may be caught by dozens at a time. Abundant but local at the end of May, and in June in shady, moist places among the low, rocky, barren hills.”

4. HIPPARCHIA THELEPHASSA (no. 10).

Eumenis thelephassa, Hübner, Samml. exot. Schmett. ii. pl. 85 (1816-24).

“Very common at the beginning and middle of May in the nullahs and on the rocky slopes at the foot of the hills, resting under the shade of rocks and stones during the heat of the day, and flying about in the early morning and evening, when it is easily captured. In June scarcely a specimen was to be found.”

5. EPINEPHELE ROXANE (no. 20).

Epinephele roxane, Felder, Reise der Nov. Lep. iii. p. 491. no. 849, pl. 69. figs 12, 13 (1867).

“Found commonly at the end of May and in June in company with the two species of *Hipparchia*, but lasting longer than *H. thelephassa*.”

This species although nearly allied to *E. davendra*, differs in its paler coloration and the more deeply sinuated margin of the secondaries.

6. EPINEPHELE INTERPOSITA (no. 14). (Plate XXXIX. fig. 1.)

♀. *Epinephele interposita*, Erschoff, Lep. Turk. p. 22. no. 68, pl. 2. fig. 16 (1874).

“This appears to be rather rare, but is most probably common in other localities or seasons. I found one male in the middle of May, and one female at the end of May: the sexes are very much alike.”

Major Roberts forwarded the male only, for identification: it is much like a small *E. pallescens* ♂ on the upper surface; but below all the brown areas are replaced by whitish, and there are two minute obliquely-placed ocelli near the anal angle of the secondaries as in *E. hispulla*.

7. PYRAMEIS CARDUI (no. 3).

Papilio cardui, Linnæus, Faun. Suec. p. 276. no. 1054 (1761).

“Common, but not at all abundant; larva found on different species of thistles; at Jutogh I have found it on the common artichoke and occasionally on the mallow. June and July. Might probably be very common later on in the season.”

8. MELITÆA ROBERTSI, sp. n. (no. 12). (Plate XXXIX. fig. 2.)

Allied to *M. didyma*; coloration and general aspect above more like *M. perseæ*: bright fulvous; wings with the fringe white spotted with black, these spots united at their bases by a black line; a marginal series of black spots alternating with the spots on the fringe: primaries with the ordinary black markings on the basal half and the usual zigzag series of prominent black spots; four minute black subapical dots: secondaries with a few scattered black scales in the cell and an angular series of seven black dots beyond the middle; no trace of the ordinary series of submarginal lunules. Under surface paler than in *M. didyma*, the black markings much smaller, the submarginal series of spots in the primaries reduced as above to four subapical dots (the last two geminate): secondaries with both black and red spots reduced in size, the series of spots placed ordinarily halfway between the two red bands closely approximated to the series which bounds the inner edge of the outer band and continued across the wing, so as to make a series of slightly interrupted annular markings; the series usually bounding the outer edge of the same red band only represented by a few black scales. Expanse of wings 1 inch 6 lines.

“Rather common on the bare uncultivated wastes at the foot of the hills at the end of May and beginning of June. I found one chrysalis, but not the larva; the chrysalis was loose in the middle of a low plant.”

LYCENIDÆ.

9. LAMPIDES BÆTICA (no. 6).

Papilio bæticus, Linnæus, Syst. Nat. i. 2, p. 789. no. 226 (1767).

“Common everywhere in April, May, June, &c.; varies extremely in size.”

10. LAMPIDES CONTRACTA, sp. n. (Plate XXXIX. fig. 3.)

♂. Glossy lilac above, the body dark grey, with the head and sides of abdomen white, antennæ black annulated with white: wings with slender black marginal line, fringe white; base of wings bluish; costal border of primaries pale bluish from the base to the end of

the cell; secondaries with brownish costal border; two black spots, the inner one bifid, above the tail, succeeded by a slender white line; tail black tipped with white. Wings below very pale whitish-brown, with a white-bordered pale brown elongated spot at the end of each cell, followed by a discal series of similar spots, interrupted in the secondaries; a marginal series of white and brown ocelloid spots of the usual form: secondaries with three black spots above the tail at anal angle, the two outer ones large, zoned with orange and varied with metallic golden green, the outermost spot extremely small; two subcostal black spots and a third within the cell: body below white. Expanse of wings $11\frac{1}{2}$ lines.

♀. Wings above pale brown, with a slender black marginal line followed by a brown line; fringe white; primaries washed towards base of interno-median area with silvery blue; secondaries with a series of six ocelloid spots close to outer margin—the first indistinct, the first four brown with white borders, the fifth large, black, with orange inner and white outer border, the sixth bifid, black with bluish inner and white outer border; tail black, tipped with white; body browner than in the male; under surface slightly browner than in the male; otherwise the same. Expanse of wings 10 lines.

“Rare in May, very common in June, not so variable in size as *L. bæticus*, and much smaller.”

Allied to *L. cnejus*, but constantly smaller and of an entirely different colour, the upper surface of the male being altogether blue and the under surface whiter; the female is also paler; the pattern of the under surface is very like that of *L. galba* as figured by Lederer. Mr. Moore has a series of *L. contracta* from Kutch.

11. *LYCÆNA PERSICA* (no. 5).

Lycæna icarus, var. *persica*, Bienert, Lep. Ergeb. p. 29 (1870).

Allied to but distinct from *L. icarus*; the fringe shorter; the secondaries more produced at apex: the male below chalky white, all the black spots extremely small, the marginal ocelloid spots scarcely visible, those of the primaries showing no trace of orange, those of the secondaries with small pale orange lunules along their inner margins; the female with greyish costal border on the upper surface of the primaries and with the greater part of the wing behind this washed with blue, the secondaries broadly washed with blue in the same manner; the orange submarginal spots well separated on both primaries and secondaries. The wings below whitish-brown with all the black spots smaller, the primaries with two additional spots towards the base; the orange on the submarginal spots very pale and restricted: both sexes with very little blue or green at the base of the wings below. Expanse of wings, ♂ 1 inch 2 lines, ♀ 1 inch 4 lines.

“Abundant in April, May, and June.”

12. *LYCÆNA BRACTEATA* sp. n. (no. 18). (Plate XXXIX. fig. 4.)

♂. Allied to *L. argus*, with which it agrees on the upper surface: below considerably paler, with all the black spots much smaller and

distinctly white-bordered, the orange spots wholly absent from the primaries, and the orange borders of the secondaries only represented by small ochreous lunules above the metallic spots, the latter silvery green with black centres instead of margins, extremely small towards the apex, but increasing in size towards the anal angle. Expanse of wings 1 inch 1 line.

♀. Of a more pinky lilac colour than the male; the primaries with a considerably broader, but brown instead of black, border; a well-defined black discocellular stigma; secondaries with brown costal border; outer margin black preceded by five or six rounded blackish spots: wings below altogether paler than in the male; but the example is evidently not a fresh one, so that this character may be due to fading. Expanse of wings 1 inch 1 line.

“Found in May, and common in June.”

The female is utterly unlike that sex of *L. argus* on both surfaces, being in coloration almost like a male insect.

13. SCOLITANTIDES CASHMIRENSIS (no. 11).

Scolitantides cashmirensis, Moore, Proc. Zool. Soc. 1874, p. 272.

“Very common here at the end of May and in June, but was rather local in Cashmir.”

14. CHRYSOPHANUS STYGIANUS, sp. n. (no. 4). (Plate XXXIX. fig. 5.)

♂. Smoky brown: primaries in certain lights shot with fiery copper; spotted with black as in *C. timeus* (*eleus*? Fabr.); two small orange spots beyond the interrupted black discal series: secondaries with a slender undulated deep-reddish-orange band on a black ground near the outer margin; above it a series of four or five pale blue hastate spots, and above these again beyond the end of the cell two black dots; a black dash at the end of the cell; fringe greyish white: body blackish. Wings below very like *C. timeus*, but considerably paler, the submarginal black spots of primaries less distinctly white-bordered; the apex and outer margin of primaries and the ground-colour of the secondaries very pale grey. Expanse of wings 1 inch 4 lines.

♀. Larger than the male, the primaries with the outer third of the cell and the subapical area bright orange, the black spots larger, otherwise similar: below slightly yellower in tint all over, so that the ground-tint of the secondaries has a pale brownish rather than greyish hue. Expanse of wings 1 inch 5 lines.

“Common in April and May, abundant in June.”

This species is considerably larger than *C. phloas*, and has the costal margin of the primaries longer.

PAPILIONIDÆ.

15. COLIAS HELICHTHA (no. 24).

Colias helichtha, Lederer, Verh. zool.-bot. Ges. ii. p. 33 (1823).

“This I should have at once put down as only a variety of no. 2

(*C. pallida*), but for the fact that I have never taken it at Jutogh or elsewhere. I caught several specimens in the lucerne gardens here, owing to their being very conspicuous; but they are rare compared with the above species: April, May, and June. A few specimens have less orange and more nearly approach no. 2."

In Kirby's Catalogue this species is regarded as a variety of *C. erate*; but Dr. Staudinger hazards the suggestion that it may be a hybrid between *C. erate* and *C. edusa*; unfortunately for the latter view, *C. edusa* does not exist at Candahar.

16. *COLIAS ERATE* (no. 2).

Colias erate, var. ♀ *pallida*, Staudinger, Cat. Lep. Eur. p. 3. no. 54 (1861).

"This and no. 21 (*C. sareptensis*) are found here throughout the year, and are both abundant in June in lucerne fields. I was unable to find the larvæ of any of the *Colias*."

Major Roberts has sent both *white* and *yellow* females of this species. He states also that the female is "yellow or white;" otherwise I should have suspected it to be a local race of the European form.

17. *COLIAS SAREPTENSIS* (no. 21).

Colias hyale, var. *sareptensis*, Staudinger, Cat. Lep. Eur. p. 5. no. 48 (1871).

Major Roberts says, "This is in some cases very difficult to distinguish from no. 2, as I have caught the sexes together which appear to represent ♂ no. 2 and ♀ no. 21; and often I am unable to distinguish the sexes in no. 21." From this observation I should think it likely that the female form to which Dr. Staudinger has given the name of *pallida* is a hybrid between *C. erate* and *C. sareptensis*¹.

18. *TERACOLUS FAUSTUS* (no. 26).

Papilio fausta, Olivier, Voy. l'Emp. Oth. Atl. pl. 33. figs. 4a, b. (1801).

"Caught seven or eight specimens, all males, along the dried-up bank of the river, between the 20th June and 2nd July. Probably the females would have appeared in July; but I was unable to go out after them."

19. *BELENOIS MESENTINA* (no. 8). (Plate XXXIX. fig. 6.)

Papilio mesentina, Cramer, Pap. Exot. iii. pl. 270. figs. A, B (1782).

"Rare in April, but abundant in June." The examples sent were taken at the end of June.

Major Roberts sends the following description of the larva and pupa:—"Larva 118. About 1" long. Back and sides smooth and

¹ Major Roberts has sent sexes of both species taken *in coitu*; one sent as "no. 21" is certainly a yellow female of "no. 2," and *vice versa* with a white female sent as "no. 2."

shiny, covered with minute yellow warts (dots); hairy over the feet and extreme segments; soft, short, and whitish hairs. A broad yellowish-green dorsal band with a darker green pulsating dorsal stripe. A dark brown or blackish lateral band, in which the yellow dots are conspicuous, giving it a grey appearance. Spiracular stripe green, more or less dirty-looking. Head and thirteenth segment black with yellow dots. Belly and feet green. Posterior segments slightly attenuated. Head slightly larger (when crawling) than second segment, but about the same size as third segment."

"Rokeran, end of June; gregarious and abundant on a species of caper with shining green leaves and thorns, and fruit resembling a minute melon.

"*Pupa* in June. Yellowish white, speckled with yellow and black dots."

20. SYNCHLOË DAPLIDICE (no. 9).

Papilio daplidice, Linnæus, Syst. Nat. i. 2, p. 760. no. 77 (1767).

"Frequents cultivated ground and gardens; common in June."

Major Roberts doubts the identity of this species with *S. daplidice*, because of its agility as compared with those which he has previously taken in India. He says, "It is not a sluggish insect, quite the reverse, as it settles suddenly on a flower and is as suddenly off again, and not nearly so easy to capture as no. 1." This, however, is precisely the habit of *S. daplidice* as I have seen it in the Rhone valley; I found it less easy to capture than *Colias hyale*, so that after a morning's hard work, I had only succeeded in boxing three specimens.

21. SYNCHLOË IRANICA (no. 23). (Plate XXXIX. fig. 7.)

Pieris iranica, Bienert, Lep. Ergebn. p. 27 (1870).

Pieris vipasa, Moore, Proc. Zool. Soc. 1872, p. 565.

"Frequents the rocky uncultivated slopes of the hills where the food-plant of the larva grows. This species is common in June."

"*Larva* 112. About 1" long. General colour pale green, with longitudinal yellow bands and black dots; thickest in the middle, slightly tapering at both ends; has a rough appearance from being ribbed, and is covered with minute hairs. Dorsal and lateral bands dull green, the black dots giving it a blue appearance. Subdorsal band yellow. Spiracular band white, yellow at the junction of the segments. Head pale green with black dots; a yellow patch on each side, a whitish collar on second segment. Belly pale green. Feet pale green with a yellow mark above each. Spiracles indistinct.

"Candahar, middle of May, June; on a wild mignonette growing on the rocky hills and slopes.

"*Pupa* attached to the stem or leaf of its food-plant by the tail and also by a thread over the back. A beak-like proboscis turned upwards and rather long."

22. *GANORIS MANNII* (no. 1).

Pontia manni, Mayer, Stett. ent. Zeit. 1851, p. 151.

"Found throughout the year, very common in June. I have not met with this in any part of India." The pair sent to me were taken *in coitu*.

HESPERIIDÆ.

23. *ERYNNIS MARRUBII* (no. 17).

Hesperia malvarum, var. *marrubii*, Herrich-Schäffer, Schmett. Eur. i. Hesp. figs. 14, 15 (1845).

"Occurs in May, and common in June." The specimen sent home was taken at the beginning of July.

"*Larva* 116. About 10^{'''} long; thickest in the middle, rather attenuated at each end; sluggish and wrapped up in a leaf.

"Skin soft, but with ribbed and irregular surface and covered with very short and minute whitish hairs. General colour dull (dusty) green; dorsal line green, very fine and only visible on a few of the front segments. Head large, globular, slightly indented at the top, deep black (like charcoal), much larger than several segments which follow; second segment smaller than head or third segment and forming a black neck or collar with three large yellow spots on it. Subdorsal stripe of a paler green than the ground-colour, but rather dull; spiracular, slightly raised or projecting flesh from the sides. Rokeran, Candahar, end of June; wrapped up in the leaves of the mallow, on which it feeds.

"*Pupa*, wrapped up in a leaf, tightly webbed in and fastened by the tail only. Colour, brown washed with white."

SPHINGIDÆ.

24. *CHÆROCAMPA CRETICA*. (Plate XXXIX. fig. 8.)

Deilephila cretica ♀, Boisduval, Ann. Soc. Linn. Paris, 1827, p. 118. pl. 6.

"The larva of this species was exceedingly common on the vine (which is largely cultivated here) end of May and June. It is closely allied to one found at Jutogh and in Kashmir on the wild balsam, but is distinct; the moth of this species is, I think, of a much paler colour on the front wings. Out of over 100 larvæ which I examined I could not find one black variety (of course they turn brown just before changing), while in the other species the larva is as often black as green, so far as my experience goes. Every specimen of this changed in about two to three weeks after becoming a chrysalis, while with the Kashmir (balsam) one they all remained through the winter in the pupa state."

"*Larva* 113. About 3" long, at rest; anterior segments attenuated and retractile. Robust, skin soft and smooth.

"Horn very short, slightly curved, pale mauve or purple, pink at tip. General colour green (agreeing with the underside of the vine-leaves), speckled with pale yellow. A thread-like green dorsal line; a pale yellow subdorsal stripe, meeting the one on the opposite side

at the base of horn. A subdorsal row of eye-spots, each consisting of a green patch in a yellow oval, the first spot on the 5th segment being the largest and most distinct, those on each following segment becoming smaller, more flattened, and less distinct till lost on the 12th segment, sometimes becoming indistinct after the 7th or 8th segment: these spots are only distinct as eye-spots on the 5th and 6th segments, that on the 6th being flatter than that on the 5th, those on the remaining segments appearing like dashes while the larva is green, but more like eyes on its changing colour¹ when well fed; spiracles brown or dull pink; head, feet, belly, all green, rather darker than the back; the yellow at the bottom of the eye-spots takes part in the subdorsal stripe.

“*Pupa*, end of May and June: at the surface of the ground, under dead leaves, rubbish, &c. Often in a green leaf turned over and united by a few threads of silk, or between two leaves joined in a similar way.

“*Imago*, middle of June. About 2 or 3 weeks in the pupa state. All my specimens changing the same year.”

25. *DEILEPHILA ROBERTSI*, sp. n. (Plate XXXIX. figs. 9, 10.)

♀. Primaries above much elongated (more than in *D. tithymali*); chalky-white, with a snow-white basal spot, the markings consisting of a large oblong subbasal patch, the costal border, a very large subcostal patch beyond the cell (with a rectangular excision out of the infero-exterior portion), and a broad discal belt tapering towards the apex bright olive; the second and third median veins white externally; external border very slightly tinted with lilacine, but scarcely perceptibly; a black spot close to base of internal border: secondaries black with brown costal border, a dull rose-red discal belt commencing on the abdominal border in a large snow-white patch, as in *D. hippophaes*; external border pale flesh-tint, fringe white: body olive, sides of head and thorax, margins and fringe of tegulæ, antennæ and anterior margins of abdominal segments snow-white; the three basal segments snow-white at the sides, the two basal ones with the white area interrupted by large velvety-black spots. Under surface pale sandy greyish with a paler discal belt on the wings; primaries with a blackish nebula just beyond the cell; secondaries with a few blackish scales towards the anal angle. Expanse of wings 3 inches 1 line.

On the upper surface of the primaries this species most nearly resembles *D. dahlii*, of the secondaries *D. hippophaës*, of the body *D. esulæ*, and on the under surface *D. lathyris*: the olive tint of the thorax and the markings on the primaries is greener than in any species with which I am acquainted.

“The larva of this was found on almost every plant of a species of *Euphorbia* which is very common on the rocky hills here: the larvæ are very beautiful and conspicuous, and are very different in colouring according to their different stages of growth. It is quite

¹ Viz. to a dark brown.

distinct from a common one obtained in Kashmir, which was found on a different species of *Euphorbia* and was abundant at Goolmurg.

"About half the cocoons produced moths in about three weeks after changing; the remainder are still alive in the pupa state (31st December, 1879). Curiously enough the first larva that changed is among the latter."

"*Larva* 110. About 3" long, at rest. Anterior segments attenuated, not retractile; skin smooth and soft.

"General colour black, with white dots and spots; a subdorsal row of large white roundish spots, one on each segment, either yellow, orange, or red: a dorsal stripe varying in colour, but generally the same as the spiracular blotches; it is, however, sometimes only partially represented, and sometimes absent; when present it is broadest at the interstices, where it sometimes differs in colour from the portions between; feet, head, back of head, and base of horn either yellow, orange, or red, generally the same as the spiracular blotches and dorsal stripe; horn slightly rough, curved, rather longer than the segments, black, with the rear-base either orange, red, or yellow (being the continuation of the dorsal stripe broken by the horn, and is consequently absent in those which have no dorsal stripe); spiracles white and rather narrow ovals; head globular; belly pale yellowish green, extending up the interstices to above the spiracles. Candahar, beginning of May; abundant, all sizes.

"At the end of May most of the larvæ found presented a different appearance: the black disappears more or less, and with it many of the small white spots. In some cases the black only remains as a ring round the larger white spots; the ground-colour therefore becomes yellowish green or yellow, varying very considerably; the horn becomes black at the apical half, with the basal half the same colour as the dorsal stripe.

"The larvæ are therefore exceedingly variable in colouring (the large white spots always remaining the same, however); some specimens are consequently so unlike one another as, at first, to appear different species; every intermediate form, however, being found, does away with the idea.

"The food-plant grows in the nullahs and on the slopes of the rocky hills, is very common but scattered; and almost every plant that now (end of May) has any leaves left on it, has several larvæ feeding on it. This larva, like others of the same genus, emits a large amount of a green fluid from its mouth on being irritated in the least for the first time, not often doing it a second time.

"*Pupa*. This species does not change colour when seeking for a suitable place for its cocoon, which is at or near the surface of the ground amongst rubbish, &c."

26. *EUSMERINTHUS KINDERMANNI*. (Plate XXXIX. figs. 11, 12.)

Smerinthus kindermanni, Lederer, Verh. zool.-bot. Ver. Wien, ii. pt. 2, p. 92 (1853); Erschoff, Lep. Turk. p. 26. no. 81, tab. ii. fig. 19 (1874).

"The larva I found on willow, not common, in June; it struck

me as being smaller than the English *Smerinthus ocellatus*; and all emerged from the pupa state the same year, viz. in June, July, and August. The fact that some were only three weeks while others were over two months may lead to a suspicion that this was not natural, though all were under exactly the same conditions."

"*Larva* 114. About $2\frac{1}{2}$ " long, at rest. Skin rough; head triangular.

"General colour green, covered with minute white dots and seven long pale-yellow oblique lateral bands. (The ground-colour is the same as the willow-leaves on which the larva feeds, the yellow stripes the same as the leaf-stalks, and the head and true legs like the younger branches.) Spiracles red or dark orange with white line as centre; head green, triangular; face green, with a broad stripe of yellow or pale orange on each side; horn rough, blue, greenish at tip, long, tapering and curved; front legs same colour as stripes on the face. Candahar, beginning and middle of June. Turns brown on the back when about to change.

"*Pupa*. Subterranean, from 3 to 8 weeks in this state."

LITHOSIIDÆ.

27. DEIOPEIA PULCHELLA.

Tinea pulchella, Linnaeus, Syst. Nat. i. 2, p. 884. no. 349.

"Middle of June."

TOXOCAMPIDÆ.

28. APOPESTES PHANTASMA.

Spintherops phantasma, Eversmann, Bull. Mosc. 1843, p. 546.

"About a dozen reared from the larva, which appears to be not uncommon here, though I do not remember having found it anywhere else; the moth appeared at the end of May; the sexes appear to be alike. The larva was found on a vetch, upright with a thick stem and whitish soft downy leaves; the plant is very common about Rokeran."

"*Larva* 109. About 2" 6''' long, with 16 legs, but loops when crawling; skin soft and smooth, without hairs; anterior segments slightly attenuated.

"Ground-colour pale greenish opaque white, extending to the spiracular line: spiracular band yellow, whitish at its lower margin, and bounded on its upper margin by a black line, which is broken on each segment into three or four black dots; above this is a distinct black line and, separated from it by a band of the ground-colour, a broken subdorsal line of small black dots and dashes; below the spiracular band is a broad black band divided longitudinally by two white lines, which latter are interrupted by the legs and form two white rings on each segment above the feet; a pale green band down the belly between the feet; on the outside of each leg near the foot is a black figure resembling the letter G; head pale whitish green, shiny, with two transverse rows of black spots, the front ones being the smaller; spiracles apparently black. Candahar, end of April, on an upright vetch, 3 feet high, with yellow flowers.

